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REPORT
UNITED STATES GYPSUM
RESEARCH CENTER

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JOINT COMPOUNDS LABORATORY

SPECIAL REPORT

AND DISTRIBUTION BELOW

TITLE: MEXICAN NON-ASBESTOS ALL PURPOSE READY MIXED JOINT COMPOUND

SUMMARY: Puebla-Yeso produced trial charges of non-asbestos All-Purpose Ready Mixed Joint Compound on April 4, 1979. This material was used on a number of jobs and reported to be well received. The trial compound was produced with both Mowilith D50 (current emulsion binder) and Namex Resina 25-1015, and a bentonite in place of Mineral Thickener X-2059.

Laboratory batches were prepared using both emulsions with bentonite and Mineral Thickener X-2059. The results of these tests showed comparable characteristics.

Research approves the use of bentonite in place of Mineral Thickener X-2059 and qualifies Namex Resina 25-1015 as a replacement for Mowilith D-50.

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REPORT

Title: Mexican Non-Asbestos All Purpose Ready Mixed Joint Compound

Foreword

The proposed non-asbestos All Purpose Ready Mixed joint compound formulation had been conveyed to Puebla-Yeso by Mr. Verhage. Trial production charges were made at Puebla-Yeso about April 4, 1979.

We were advised that these trial charges were made with bentonite in place of Mineral Thickener X-2059. This substitution was made since Mineral Thickener X-2059 was not available in Mexico.

It has been Research's experience that bentonite was unsuitable for use in non-asbestos ready mixed joint compounds as it resulted in extensive cracking in the compound, reduced tape-to-compound bond and poor viscosity control.

Because of these negative factors it was felt that we should prepare batches in the laboratory and compare the performance of Mineral Thickener X-2059 and the sample of Mexican bentonite in compounds made with two different latex binders (Mowilith D-50 and Resina 25-1015)

Testing

Samples of plant produced compound were submitted to Research for evaluation. The results of these tests are shown in Table 1.

Table 2 lists the laboratory prepared formulations to evaluate Mineral Thickener X-2059 and bentonite in compounds produced with Mowilith D-50 and Resina 25-1015.

Results of Tests

The results of our tests with both plant and laboratory produced compounds show that no apparent problems occur when using bentonite in place of Mineral Thickener X-2059 as a gelling agent.

The results of tests on plant produced compounds show about the same trowel application characteristics, fissure cracking and viscosity stability characteristics. The first bond cut on the Namex resin compound was not as good as Mowilith but does improve significantly on the following cuts.

Three month aging tests on the plant trial batch material shows no problem with viscosity drift or thickening tendencies.

The laboratory prepared compounds gave the following results:

1. The bentonite Mowilith (JF-2241A) formulation had a lower water requirement than the Mineral Thickener X-2059 - Mowilith (JF-2095B) formulation.
2. With Namex Resina 25-1015 the water requirement was the same when using either bentonite or Mineral Thickener X-2059.
3. Trowel application properties of the compounds are about the same. The Resina 25-1015 - bentonite formulation (JF-2241A) was the least desirable of the group.
4. Tape-to-compound bond tests at the 75-50 and 90-90 exposure conditions showed all to be equal.

Conclusions

On the basis of both field experience and Research evaluation of the plant produced non-asbestos All-Purpose Ready Mixed joint compound the use of bentonite as a replacement for Mineral Thickener X-2059 is approved.

Likewise Namex Resina 25-1015 appears to be a suitable replacement for Mowilith D-50 and is also approved for use. It is possible that there could be a cost savings in the use of Namex. It is reported to be 54% solids whereas Mowilith is 50%. Therefore, when 12.387kg of dry resin is required it would take 22.939 kg of wet Namex or 24.774 kg of wet Mowilith to yield that amount of dry material.